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Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. (currently amended) A medical image diagnosis support device, comprising:
an organ region setting means for setting the organ regions from the medical images of the subject being obtained by a medical imaging device;
a deformation calculating means for calculating ~~the deformation degree a degree of deformation from normal shapes~~ of the organ regions being set by the organ region setting means;
a reference value storing means for storing ~~the index of~~ the deformation degree of the organ region as a reference value;
a lesion detecting means for detecting the existence of the lesion of the organ region from the result of comparing the reference value being stored by the reference value storing means with the deformation degree being calculated by the deformation degree calculating means; and
~~a presenting an informing means for presenting visually and/or auditorily informing the existence of the lesions of the organ region being detected by the detecting means to the examiner visually and/or auditorily.~~
2. (original) The medical image diagnosis support device according to claim 1, wherein the deformation degree calculation means comprises: a means for detecting the bifurcation of the previously calculated organ region;
a means for creating the plurality of the cross-sections of the organ region being diverged

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by the bifurcation being detected by the detecting means; and

a distance calculating means for calculating the shortest distance of the opposed peripheral portion between each of the plurality of cross-sectional images being created, and wherein the lesion detecting means detects the existence of a lesion in the organ region based on the shortest distance of the opposed peripheral portion between the plurality of the cross-sectional images being calculated by the distance calculating means.

3. (currently amended) The medical image diagnosis support device according to claim 1, wherein the reference value storing means stores [[the]] a plurality of templates according to the deformation degree of the organ region.

4. (currently amended) The medical image diagnosis support device according to claim 1, wherein the deformation degree calculating means includes:

a cross-sectional image calculating means for calculating the cross-sectional images that are orthogonal to axial direction of the organ region; and

an extracting means for extracting [[the]] a lumen and the exterior of the organ region from the cross-sectional images being calculated from the cross-sectional image calculating means; and calculates the degree of deformation of the lumen and the exterior of the organ region being extracted by the extracting means.

5. (currently amended) The medical image diagnosis support device according to claim 1, wherein the deformation degree calculating means includes:

a means for extracting [[the]] a hollow viscera out of the organ region being set by the

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organ region setting means;

a notable region setting means for setting the notable region of the hollow viscera being extracted by the extracting means; and

a means for creating [[the]] cross-sectional images of the hollow viscera being extracted by the extracting means based on the notable region being set by the notable region setting means, and wherein the lesion detecting means detects the existence of the lesion of the organ region based on the deformation degree of the cross-sectional images of the hollow viscera being created by the creating means.

6. (currently amended) The medical image diagnosis support device according to claim 1, wherein the presenting informing means presents informs the existence of a lesion ~~to the~~ examiner visually by displaying it through colors or movement in ~~the display~~ displayed images.

7. (currently amended) The medical image diagnosis support device according to claim 6, wherein the visual presentation ~~to the examiner~~ is executed by displaying the cross-sectional images of the organ regions being set by the organ region setting means, and by highlighting [[the]] lesion candidate portions being detected by the lesion detecting means on the cross-sectional images.

8. (currently amended) The medical image diagnosis support device according to claim 1, wherein the presenting informing means presents informs the existence of a lesion ~~to the~~ examiner auditorily by outputting it through voices and sounds, or [[the]] a variance of the

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voices and sounds.

9. (currently amended) The medical image diagnosis support device according to claim 1 further comprises:

a cross-section extracting means for extracting the cross sections from [[the]] a feature quantity of [[the]] a hollow viscera on the tomographic images being obtained by the medical imaging device;

a physical quantity calculating means for calculating the physical quantity including the radius, degree of circularity, and gravity point of the hollow viscera on the hollow viscera cross-sections being extracted by the extracting means;

an ROI calculating means for calculating the region of interest based on the physical quantity being calculated by the physical quantity calculating means;

a 3-dimensional image creating means for creating the 3-dimensional images of the hollow viscera from the tomographic images including the cross sections of the hollow viscera being extracted by the cross section extracting means within the region of interest being calculated by the ROI calculating means; and

an image displaying means for displaying the 3-dimensional images being created by the 3-dimensional image creating means.

10. (original) The medical image diagnosis support device according to claim 9 further comprises a center-line calculating means for calculating the center line of the hollow viscera based on the gravity point of the hollow viscera cross sections being calculated by the physical quantity calculating means, wherein the image display means displays the center line being

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calculated by the center-line calculating means together with the 3-dimensional images being created by the 3-dimensional image creating means.

11. (currently amended) The medical image diagnosis support method comprises:
 - an organ region setting step for setting the organ region from the medical images of the subject being obtained by the medical imaging device;
 - a deformation degree calculating step for calculating ~~the deformation degree~~ a degree of deformation from normal shapes of the organ region being set by the organ region setting step;
 - a reference value storing step for storing ~~the index of~~ the deformation degree of the organ region as a reference value;
 - a lesion detecting step for comparing the reference value being stored by the reference value storing step with the deformation degree being calculated by the deformation degree calculating step, and for detecting the existence of a lesion of the organ region from the result of the comparison; and
 - ~~a presenting an informing step for presenting visually and/or auditorily informing the existence of a lesion to the examiner visually and/or auditorily.~~

12. (original) The medical image diagnosis support method according to claim 11, wherein the deformation degree calculating step includes:
 - a step for detecting the calculated bifurcation of the organ region;
 - a step for creating the plurality of cross-section images of the diverged organ region by the bifurcation being detected by the previous step; and a distance calculating step for calculating the shortest distance of the opposed periphery portion to the spacing between the plurality of

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cross-sectional images being respectively created, and wherein the lesion detecting step detects the existence of the lesion of the organ region based on the shortest distance of the opposed periphery between the plurality of the cross-sectional images being calculated by the distance calculating step.

13. (currently amended) The medical image diagnosis support method according to claim 11, wherein the reference value storing step stores [[the]] a plurality of templates according to the deformation degree of the organ regions.

14. (currently amended) The medical image diagnosis support method according to claim 11, wherein the deformation degree calculating step includes:

a cross-sectional image calculating step for calculating the cross-sectional images that are orthogonal to the axial direction of the organ region; and

an extracting step for extracting [[the]] a lumen and the exterior of the organ region from the cross-sectional images being calculated by the cross-sectional image calculating step, and calculates the deformation degree of the lumen and the exterior of the organ region being extracted by the extracting step.

15. (currently amended) The medical image diagnosis support method according to claim 11, wherein the deformation degree calculating step includes:

a step for extracting [[the]] a hollow viscera out of the organ regions set by the organ region setting step;

a notable region setting step for setting the notable region of the hollow viscera being

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extracted by the extracting step; and

a step for creating the cross-sectional images of the hollow viscera being extracted by the extracting step based on the notable region being set by the notable region setting step, and wherein the lesion detecting step detects the existence of the lesion of the organ region based on the deformation degree of [[the]] cross-sectional images of the hollow viscera being created by the creating step.

16. (currently amended) The medical image diagnosis support method according to claim 11, wherein the presenting informing step presents informs the existence of a lesion being detected by the detecting step ~~to the examiner~~ visually through displaying it by color tinting and/or the movement on [[the]] a displayed image.

17. (currently amended) The medical image diagnosis support method according to claim 16, wherein the visual presentation ~~to the examiner~~ is executed by displaying the cross-sectional images of the organ regions being set by the organ region setting step, and by highlighting [[the]] a lesion candidate portion being detected by the lesion detecting step on the cross-sectional images.

18. (currently amended) The medical image diagnosis support method according to claim 11, wherein the presenting informing step presents informs the existence of a lesion being detected by the detecting step ~~to the examiner~~ auditorily through outputting it by voices and/or sounds, or [[the]] a variance of voices and/or sounds.

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19. (currently amended) The medical image diagnosis support method according to claim 11 further comprises:

a cross-sectional image extracting step for extracting the cross sections from [[the]] a feature quantity of [[the]] a hollow viscera in the cross-sectional images being obtained by the medical imaging device;

a physical quantity calculating step for calculating the physical quantity including the radius, degree of circularity and gravity point of the hollow viscera on the cross-sectional image of the hollow viscera being extracted by the extracting step;

an ROI calculating step for calculating the region of interest based on the physical quantity being calculated by the physical quantity calculating step;

a 3-dimensional creating step for creating the 3-dimensional images of the hollow viscera from the cross-sectional images including the cross-section of the hollow viscera being extracted by the cross-sectional image extracting step within the region of interest being calculated by the ROI calculating step; and an image displaying step for displaying the 3-dimensional images being created by the 3-dimensional creating step.

20. (original) The medical image diagnosis support method according to claim 19, further comprises the center line calculating step for calculating the center line of the hollow viscera based on the gravity point of the cross section of the hollow viscera being calculated by the physical quantity calculating step, wherein the image display step displays the center line being calculated by the center line calculating step together with the 3-dimensional images being created by the 3-dimensional image creating step.